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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,695	08/23/2001	Stefan Boneberg	1748X/50331	8405
7590 09/20/2005 CROWELL & MORING, L. L. P. P.O. Box 14300 Washington, DC 20044-4300			EXAMINER DUONG, THANH P	
			ART UNIT 1764	PAPER NUMBER

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/934,695

Applicant(s)

BONEBERG ET AL.

Examiner

Tom P. Duong

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-9 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5-9 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 2, 2005 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 5 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fowler (4,115,467). Regarding claim 5, Fowler discloses a gas-generation device generating (Fig. 1) a hydrogen-rich gas from at least one of partial oxidation (43) of an oxygen/fuel mixture (via lines 44 and 45) or catalytic steam reforming of water/fuel mixture (32), comprising: a partial oxidation reactor (43) by which a product gas is generated (via line 48); an adiabatic, catalytic after-treatment stage (38), downstream (connected via line 48) of the partial oxidation reactor (43), by which an oxygen content in the product gas generated by the partial oxidation reactor (43) is minimized; and steam reformer (32) downstream (connected via lines 5, 4, 17, 10, and 11) of the

after treatment stage (38) to which the product gas with minimum oxygen content is fed from the after treatment stage (38). Regarding claim 8, Fowler discloses water or steam (via line 22) is added to the steam reformer (32). Regarding claim 9, Fowler shows on Fig. 1 that the catalytic after-treatment (38) is integrated between the partial oxidation (43) and the steam reformer (32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowler '467 in view of Strobel et al. (6,620,536). Regarding claims 6-7, Fowler '467 discloses a shift reaction stage 38 but fails to disclose a precious metal-containing catalyst on a catalyst support having low heat capacity. Strobel '536 teaches the catalytic after-treatment stage (2) comprises a precious metal containing catalyst of platinum (Col. 3, lines 16-20) and the catalyst is being supported by zeolite or alumina, which has a low heat capacity. Such catalyst converts or reduces the carbon monoxide concentration. Thus, it would have been obvious in view of Strobel to one having ordinary skill in the art to modify the gas generation system of Fowler '467 with an after-treatment catalyst on a catalyst support as taught by Strobel in order to facilitate the

conversion of carbon monoxide to carbon dioxide and/or to reduce the concentration of carbon monoxide.

Response to Arguments

Applicant's arguments filed August 2, 2005 have been fully considered but they are not persuasive. The request for reconsideration has been carefully considered. Applicants argue that there is no suggestion that the Fowler steam reforming stage 32 is downstream of the CO shift reaction stage 38 or that product gas with a minimized oxygen content is fed to the steam reforming stage 32 from the reaction stage 38, Examiner respectfully disagrees. Fowler discloses the reforming stage 32 is downstream (connected via lines 5, 4, 17, 10, and 11) of the catalytic treatment stage (38) as shown in Fig. 1 and the product gas (stream exiting line 5) downstream of the catalytic treatment stage (38) contains less oxygen content being the fact that most of the fed oxygen (via line 44) has been converted in the POX reaction in the POX reactor (43).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

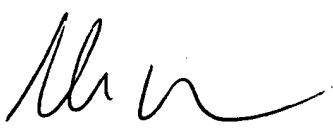
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong
September 13, 2005
TD




Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700